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**LAB - INVASIVE SPECIES SCAVENGER HUNT**

**BACKGROUND**: Over the course of human history, people have brought plants and animals to different parts of the world, some knowingly, some not. These species can be identified as either exotic, alien, noxious, nuisance or invasive, based on the damage they cause to an ecosystem.

“Exotic” and/or “alien” species do not always cause damage to an ecosystem. “Noxious” or “nuisance” species can be native to a country, but are present in such numbers as to cause them to be a pest.

Invasive species can be plants, animals or even disease-causing organisms. They can be defined as any species which is not native to an area and is able to grow in an ecosystem, outcompeting native species. Invasive species can cause widespread and permanent damage to an ecosystem. There is great concern about the damage that these invasive species are causing to ecosystems in the United States. Invasive species can and do cause native species to go extinct. In much of the world, habitat destruction is listed as the number one reason for species extinction. Now, invasive species and not pollution is listed as the number two reason for species extinction in the world.

Invasive plants can cause much damage to ecosystems, altering them forever. For example, invasive plants can grow as weeds on a farm, reducing crop yields or, even poisoning livestock in the case of the European Hemlock (Socrates was poisoned by this plant). Cheat grass is another example of an invasive plant that can completely alter an ecosystem. These plants die and are extremely slow to decompose. They create “detritus” (dead plant material) which builds up to a point where it is extremely flammable. Areas in the western United States that have been invaded by cheat grass have an extremely high fire frequency. This in turn burns the native woody shrubs and trees which provide habitat for birds, insects, etc.

Here, in New Jersey, one of the most well known invasive species is the common reed (*Phragmites australis*) which grows at the edges of lakes, ponds & wetlands and along roadsides. A European strain of this plant was brought to North America by early settlers and it has almost completely beaten out the native strain of this species. Since the invasive strain of Phragmites has many, many stomata (pores through which plants taken in carbon dioxide and release water vapor through transpiration), they use quite a bit of water from their surrounding environment. The Phragmites reeds take water in through their roots to replace the water vapor lost to transpiration. They literally suck a wetland habitat dry, causing the organisms that depend on these wetlands to not be able to survive there anymore.

In the United States, in 2000, Pimentel, et al., a team of economists, estimated that the cost of dealing with invasive species was approximately $137 billion/year. This was calculated on “human losses”, such as farmland and controlling invasive species. This did not include those losses which cannot be measured in money such as loss of ecosystems, extinction of native species, etc.

**PURPOSE:** To build awareness of how many of the plants and animals that we see every day are actually invasive or exotic to the United States. In addition, to help students hone their observational and critical thinking skills in terms of recognizing specific plants and animals based on the list of “distinguishing characteristics” present.

**PROCEDURE**

1. Get a copy of the invasive species flash cards – one set per group.

2. Using the flash cards as a resource, search the area we are in for invasive species. Record what you find (name and place found) on **DATA TABLE 1**.

3. Add up the number of each invasive species your found and record this on **DATA TABLE 1**.

4. Make a graph of the type of species found and the number of that species found (**LINE GRAPH**)

5. Answer the Conclusion questions.

**RESULTS**

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| **NAME OF SPECIES** | **NO. OF SPECIES FOUND** | **TOTAL NO. OF SPECIES FOUND** | **AREA FOUND** |
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**CONCLUSION**

1. Which species was found the most? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. Which are had the most invasive species? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. Why are invasive species harmful to native species? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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4. Are plants the only kind of invasive species? Identify at least 3 other organisms that are

invasive. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5. What can you do to prevent/control invasive species in the environment? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**GOING FURTHER**

Briefly research one of the invasive species below and answer the following questions in detail:

1. The invasive species I chose was: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. How has that invasive species affected the ecosystem? (negative, positive or both).

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3. What is being done (research, etc.) to control or eliminate this invasive species? \_\_\_\_\_\_\_\_\_\_

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**INVASIVE SPECIES**

[zebra mussels](http://www.great-lakes.net/envt/flora-fauna/invasive/zebra.html)

[Zebra Mussels - Wikipedia](http://en.wikipedia.org/wiki/Zebra_mussel)

[More on Zebra Mussels](file:///\\storage\data\teachers\scollins\SRHS\Invasive%20Species\INVASIVE%20SPECIES%20ACTIVITY.docx)

[Chestnut Blight](file:///\\storage\data\teachers\scollins\SRHS\Invasive%20Species\INVASIVE%20SPECIES%20ACTIVITY.docx)

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